

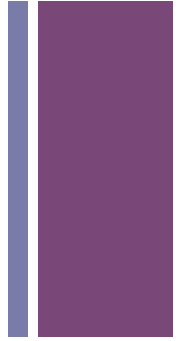
# What place are you in?

Presented by:  
Jennifer Hagman  
Kelli Wasserman  
Dana Gonzalez

## + Today's Session...

We are going to start this session with a memorization activity. We are going to go quickly and we do not mean to imply that this is the way it is done in classrooms. The short amount of time we are going to give you is both practical – we want to move quickly into the main part of the session – and pertinent: we want you to have a “quick” memorization experience.

# + Multiplication Facts



Please practice the multiplication facts.

You will have 3 minutes to study them.

# Fact Cards



$$\begin{array}{r} 12 \\ \times 3 \\ \hline 41 \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 4 \\ \times 3 \\ \hline 22 \end{array}$$

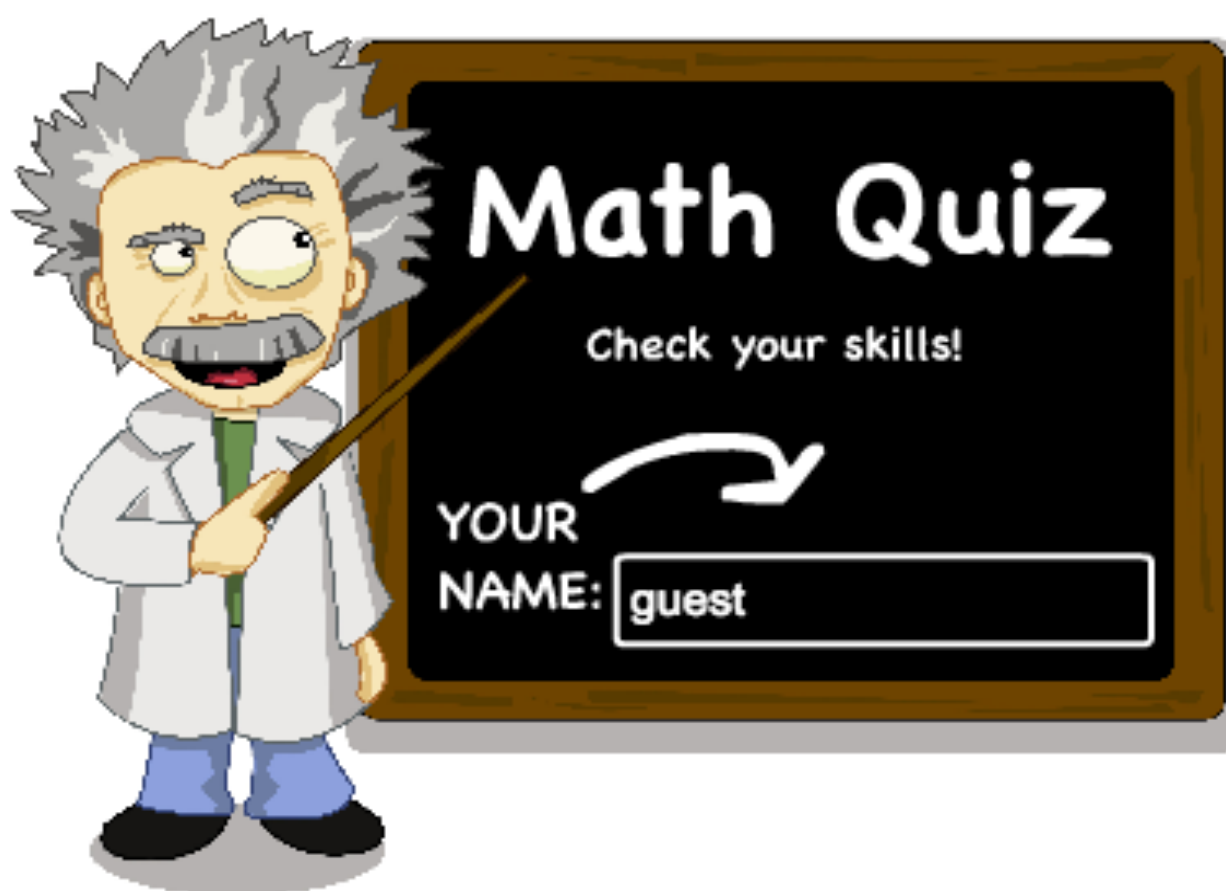
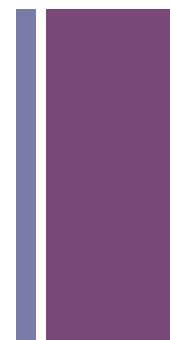
$$\begin{array}{r} 3 \\ \times 3 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 2 \\ \times 3 \\ \hline 11 \end{array}$$

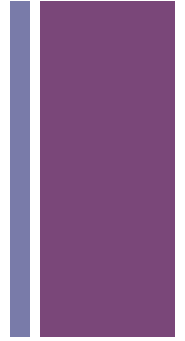
$$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 10 \\ \times 3 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 2 \\ \times 4 \\ \hline 13 \end{array}$$

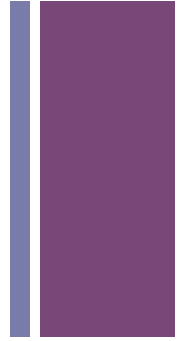


## + Self Assessment

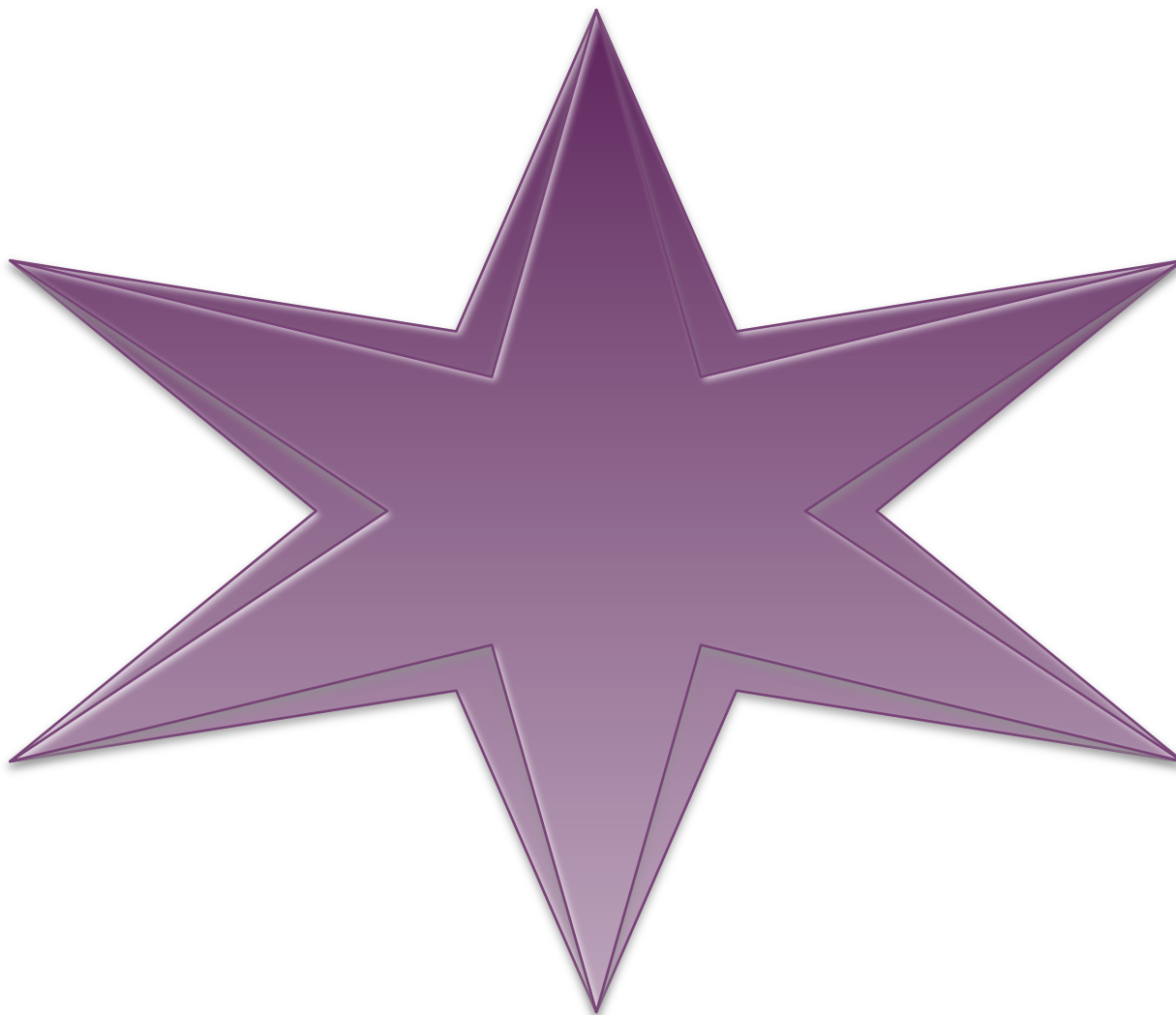
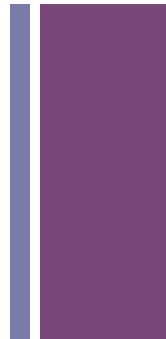


- How well do you think you did on the quiz?

## + Money Combinations



- Suppose that my bank is out of dimes. Using quarters, nickels and pennies, create a list of amounts of money you can make using the fewest coins possible.
- As you are creating your list, think about what patterns you see.

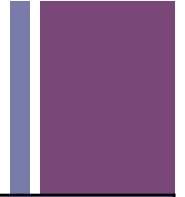






Number of Quarters	Number of Nickels	Number of Pennies	Number of Cents

If we insert a new column to the left of “Number of Quarters”, what would we call it and why?



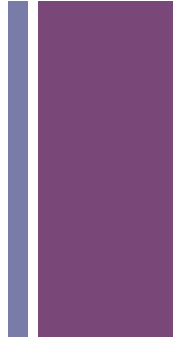
<b>Number of ???????</b>	<b>Number of Quarters</b>	<b>Number of Nickels</b>	<b>Number of Pennies</b>	<b>Number of Cents</b>

If we insert a new column to the left of “Number of Quarters”, what would we call it and why?

+



243

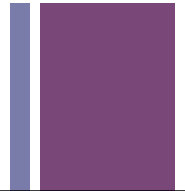


What does it mean when I say the number 243?

(Think place value.)

Can we write that in expanded notation?

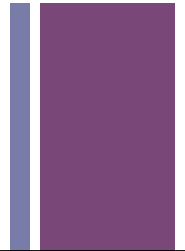
+



Number of ??????	Number of Hundreds	Number of Tens	Number of Ones	Number

If we insert a new column to the left of “Number of Hundreds”, what would we call it and why?

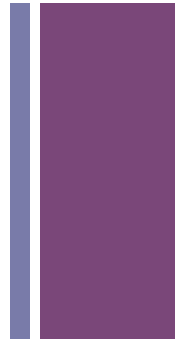
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Number of ???????	Number of Quarters	Number of Nickels	Number of Pennies	Number of Cents

What number system are we using here?

## + Base 5 Math



$$4_5 + 2_5 = ???$$

Show your solution in at least 2  
ways.

## + Base 5 Math

1.  $4_5 + 2_5 =$

2.  $12_5 + 23_5 =$

3.  $44_5 + 13_5 =$

4.  $32_5 + 23_5 =$

5.  $122_5 + 34_5 =$

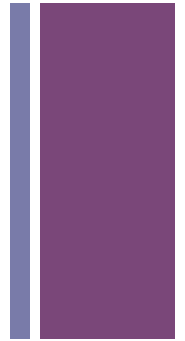
Solve in at least  
two ways:

Numbers

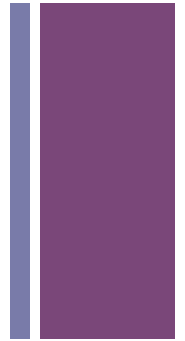
Pictures

Words

Symbols(?)



## + Base 5 Math



Solve in at least  
two ways:

Numbers

Pictures

Words

Symbols (?)

6.  $44_5 - 13_5 =$

7.  $32_5 - 23_5 =$

8.  $432_5 - 134_5 =$

9.  $102_5 - 43_5 =$

10.  $33_5 - 32_5 =$



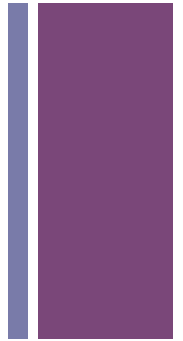
## + Base 5 Multiplication

$$23_5 \cdot 3_5 =$$

What methods do we have for multiplication in base 10?

How can those help us to multiply in base 5?

Solve the multiplication problem using at least 2 methods.



+

# Base 5 Multiplication

$$\begin{array}{r} 12 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 3 \\ \hline \end{array}$$

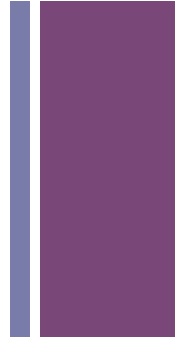
$$\begin{array}{r} 2 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \times 3 \\ \hline \end{array}$$

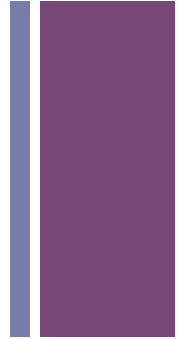
$$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$$

## + Reflection



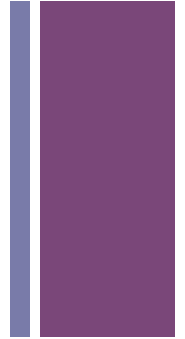
- The point of today's session is ...
- When discussing place value, manipulatives ...

# + Reflection – Standards for Mathematical Practice (SMP)



1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

# + Reflection – Standards for Mathematical Practice (SMP)

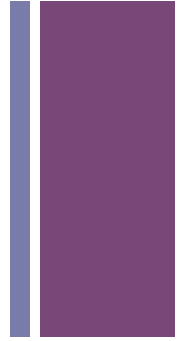


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# + “New Math”



## + References



- “Quiz 1” from UCLA’s Math Content Programs for Teachers Course, Number Power 1.
- “New Math” Video from  
<http://www.youtube.com/watch?v=DfCJgC2zezW>